Public Workshop
on
Prop. 50 Water Desalination Grants
2006 Funding Recommendation

Office of Water Use Efficiency and Transfers
Department of Water Resources

June 23, 2006
Sacramento, CA

Why Desalination in California?

- Much of the population lives in coastal regions
- Water supply reliability through droughts
- Cost and environmental impact of new dams, conveyances
- Reduction of some current sources
- Increasing urban demand
- Need for high quality water
- We like to stay ahead of the curve….

Benefits of Desalination

- Can help meet water demand by introducing a new water supply component
- Diversify the State's water portfolio
- Drought-proof
- Ocean Water Desalination - Renewable
- Brackish Water Desalination – Use of previously unusable water supplies

California Water Plan Update: Resource Management Strategies

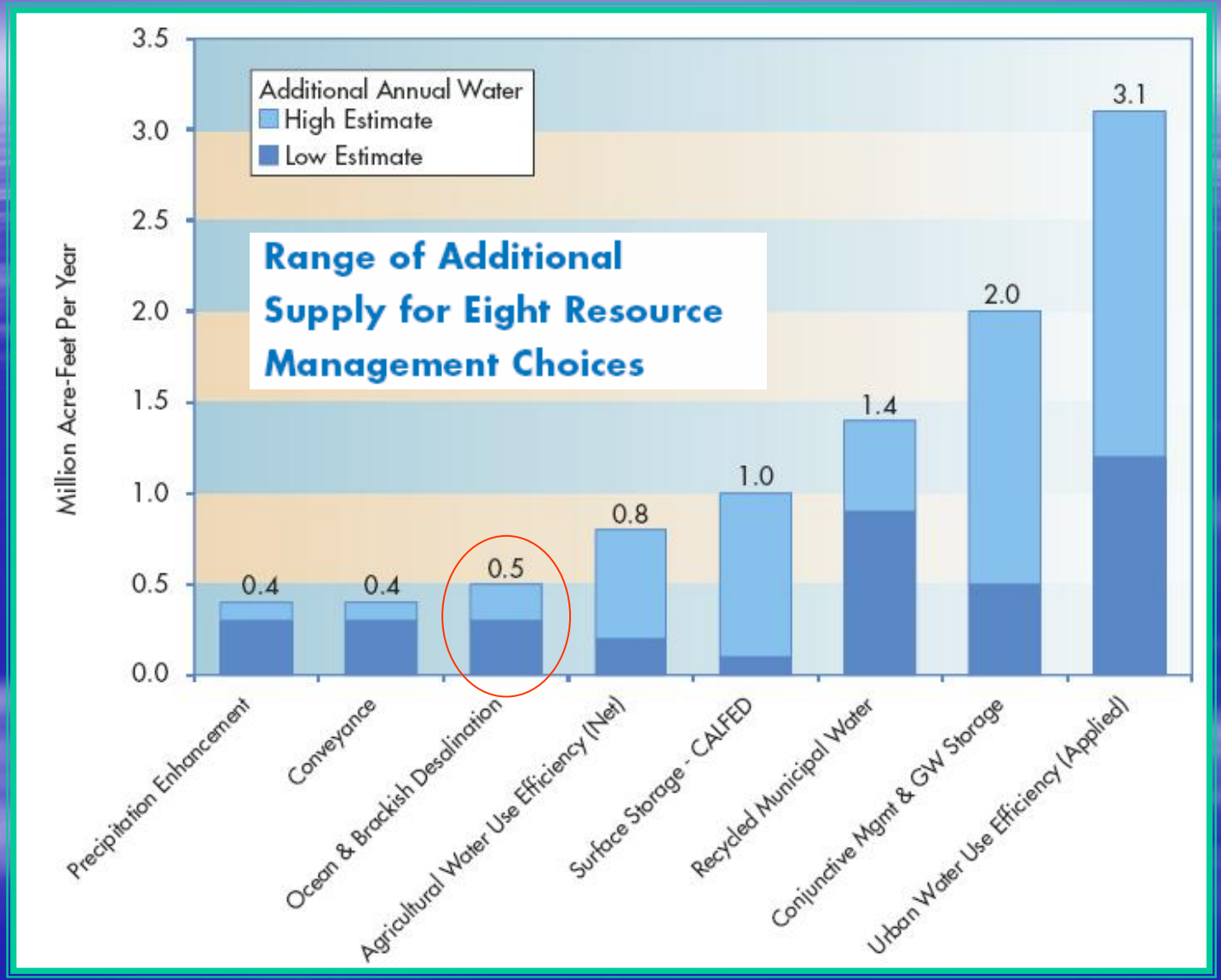
Reduce Water Demand
- Agricultural Water Use Efficiency
- Urban Water Use Efficiency

Improve Operational Efficiency & Transfers
- Conveyance
- System Reoperation
- Water Transfers

Increase Water Supply
- Conjunctive Management & Groundwater Storage
- **Desalination –Brackish & Seawater**
- Precipitation Enhancement
- Recycled Municipal Water
- Surface Storage – CALFED
- Surface Storage - Regional/Local

Improve Water Quality
- Drinking Water Treatment and Distribution
- Groundwater/Aquifer Remediation
- Matching Quality to Use
- Pollution Prevention
- Urban Runoff Management

Practice Resource Stewardship
- Agricultural Lands Stewardship
- Economic Incentives (Loans, Grants, and Water Pricing)
- Ecosystem Restoration
- Floodplain Management
- Recharge Areas Protection
- Urban Land Use Management
- Water-Dependent Recreation
- Watershed Management


Range of Additional Supply for Eight Resource Management Choices
Additional Annual Water
High Estimate
Low Estimate
Million Acre-Feet Per Year
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.4
0.4
0.5
0.8
1.0
1.4
2.0
3.1
Precipitation Enhancement
Conveyance
Ocean & Brackish Desalination
Agricultural Water Use Efficiency (Net)
Surface Storage - CALFED
Recycled Municipal Water
Conjunctive Mgmt & GW Storage
Urban Water Use Efficiency (Applied)

Desalination Task Force:
Background & Objectives

- AB 2717, Hertzberg – Signed 09/26/2002
- Task Force Formed by DWR
  - Convened 05/29/2003
  - Report to Legislature 10/09/2003
- Objectives:
  - Identify potential opportunities and impediments for using desalination
  - Examine what role, if any, the State should play in furthering the use of desalination

Task Force Recommendations

The Task Force put forth a set of 29 recommendations covering a broad range of issues including:

- ✓ energy
- ✓ environment,
- ✓ planning,
- ✓ permitting,
- ✓ funding, and
- ✓ equity.

Among the Task Force's 29 Major Recommendations:

- ✓ Include desalination, where economically and environmentally appropriate, as an element of a balanced water supply portfolio, which also includes conservation and water recycling to the maximum extent practicable
- ✓ Provide funding for research and development projects
- ✓ Evaluate all new water supply strategies including desalination based integrated planning, growth and water supply/demand projection
- ✓ Ensure desalination projects are designed and operated to avoid, reduce or minimize environmental impacts
- ✓ Ensure adequate public involvement

Desalination and DWR (1)

- **Framework: California Water Plan Update**
  - **Develop a strategic plan for adequate, reliable, secure, affordable and sustainable water of suitable quality for all beneficial uses.**
  - **Ensure that any resulting water supply be part of a balanced and comprehensive water portfolio that includes conservation and recycling.**

Desalination and DWR (2)

- No preference for or bias against specific technology
- No preference for feedwater sources, an equal weight to both Brackish and Ocean desalination
- Prerequisite for support: the implementation of all conservation and recycling programs.
- Safeguards: Public and Environment Health Protection.
- Instruments: Technical and Financial Assistance.

Proposition 50 Chapter 6(a)

"Desalination of Ocean or Brackish waters"

Program Objectives

Assist local public agencies with the development of new local potable water supplies through the construction of brackish water and oceanwater desalination projects and help advance water desalination technology and its use by means of feasibility studies, research and development, and pilot and demonstration projects.

Proposal Solicitation Guidelines

- Proposition 50 Language
- AB 1747 Trailer Bill (Statute of 2003)
- Water Desalination Task Force's Findings and Recommendations
- Other Relevant Laws
- Public Input

Funding Criteria / Preferences

- Comprehensive conservation and recycling programs
- New and improved technology
- Public information, education, and outreach
- Multiple-benefits
- Ensure equitable access to benefits- address environmental justice impacts

Review Criteria

I	Relevance and Importance	20
II	Technical/Scientific Merit, Innovation and Technological Advancement	20
III	Project Readiness, Feasibility, and Environmental Mitigations and Benefits	15
IV	Project Tasks, Deliverables, Monitoring and Assessment	15
V	Outreach, Information Sharing, and Environmental Justice	10
VI	Qualifications of the Applicants & Cooperators	10
VII	Costs and Benefits	10

No projects with a total score of less than 70 points shall be funded

Review Process

- ***22-member Desalination Review Panel***
  - Representing local, State, and federal agencies as well as other stakeholders
  - reviewed and scored applications
- ***6-member State Agency Desalination Funding Team***
  - Representing DWR, Department of Health Services, Energy Commission, State Water Resources Control Board, and Department of Fish and Game***.***
  - Reviewed scores and ranking recommend by the Review Panel
  - Recommended the splitting of the available $21.5 million between the 4 project categories
  - Recommended amount of funding for each individual application
- ***National level involvement***

Sample Scoring Sheet

I. Relevance and Importance (20 Pts)	Total Points	Project Score
1. Goals & objectives of the project/study clearly stated? 2. Need for the project / Important issues investigated? / Relevance to California. 3. Consistency with program goals of furthering economically & environmentally acceptable desal, advance the technology, and address important desalination issues. 4. Consistency with local or regional water management plans 5. Implementation of all conservation / recycling programs to the maximum extent practicable	20	0.0

II. Technical/Scientific Merit, Innovation and Technological Advancement (20 Pts)	Total Points	Project Score
1. Technical adequacy of the approach / Methods and procedures well defined 2. Is there an innovation component that will potentially help advance desalination technology? 3. Is project using Best Available Technology? 4. Are proposed methods implementable to other projects throughout the State?	20	0.0

III. Project Readiness, Feasibility, and Environmental Mitigations and Benefits (15 Pts)	Total Points	Project Score
1. Feasibility of the proposed work 2. Project readiness, plans, equipment, and facilities adequate? 3. Multiple benefits (environmental, water supply/quality, and other public benefits) 4. Plan for compliance with all applicable environmental and public health laws; and acquisition of necessary permits	15	0.0

IV. Project Tasks, Deliverables, Monitoring and Assessment (15 Pts)	Total Points	Project Score
1. Detailed project tasks and estimated costs 2. Reporting of results, deliverables, and timeline to allow project monitoring and evaluation	15	0.0

V. Outreach, Information Sharing, and Environmental Justice (10 Pts)	Total Points	Project Score
1. Is there a plan for public outreach? / Plan for disseminating results? 2. Is there a description of how data and other information will be handled, stored, reported and made accessible to DWR and others? 3. Is there equitable access to benefits? / Mitigation for any environmental justice impacts? 4. Are there social / economic benefits from the project (training, employment, or other)?	10	0.0

VI. Qualifications of the Applicants and Cooperators (10 Pts)	Total Points	Project Score
1. Technical expertise of applicant 2. Role of cooperators identified?	10	0.0

VII. Costs and Benefits (10 Pts)	Total Points	Project Score
1. Are project costs reasonable? 2. Are potential benefits parallel to the anticipated costs? 3. Are there important public benefits?	10	0.0

Total Score **0.0**

Review and Selection Process

Applications Received
(Deadline: 03/24/06)

Eligibility Review
(DWR Staff and Legal)

Technical Review

Score and Rank Proposals
(Draft Funding Recommendations)

Conduct Public Workshop
(Comments on Draft Funding Recommendations)

Final Funding Decision by DWR Director
(Posted to DWR Website)

Contracting process Begin

Received Applications and Funding Caps

(A Total of 49 applications Requesting $57,511,684)

Available Funds : $21,539,541

Project Type	Funding Cap	# of Applications
Feasibility Studies	$250,000 / project	7
Research & Development	$500,000 / project	13
Pilots & Demonstrations	$1.5 million / project	17
Construction Projects	$3.0 million / project	12

Summary of Recommended Grant Awards

Project Category	(Number of Funded Projects / Total Projects)	Awarded Projects Total Cost	Funds Requested	Awarded Grant
Construction Projects	(3/12)	$43,015,000	$9,000,000	$9,000,000
Pilots and Demonstrations	(9/17)	$22,873,787	$9,811,209	$8,954,577
Research & Development	(7/13)	$7,951,510	$2,860,964	$2,860,964
Feasibility Studies	(4/7)	$1,463,000	$724,000	$724,000
Total	(23/49)	$75,303,297	$22,396,173	$21,539,541

Projects Recommended for Funding

Construction Projects *(3 recommended projects out of 12 applications)*

Rank	DWR ID	Applicant	Project	Total Cost	Funds Requested	Awarded Grant
1	C-2006-04	East Bay Municipal Utility District	Low Energy Application of Desalination (LEAD) Project	$14,640,000	$3,000,000	$3,000,000
2	C-2006-07	City of Sand City	Sand City Water Supply Project (SCWSP)	$8,375,000	$3,000,000	$3,000,000
4*	C-2006-08	City of Oxnard, Water Division	GREAT Program Desalter - Blending Station No. 1	$20,000,000	$3,000,000	$3,000,000
Subtotal				**$43,015,000**	**$9,000,000**	**$9,000,000**

* Project ranked 3 was not recommended for funding as proposed work is expected to be completed prior to the expected grant awards.

Feasibility Studies (4 recommended projects out of 7 applications)

Rank	DWR ID	Applicant	Project	Total Cost	Funds Requested	Awarded Grant
1	F-2006-03	Sweetwater Authority	Otay River Basin Brackish Groundwater Desalination Study, Phase 1	$499,000	$242,000	$242,000
2	F-2006-01	City of Arroyo Grande	South San Luis Obispo County Desalination Funding Study	$90,000	$45,000	$45,000
3	F-2006-05	San Diego County Water Authority	Feasibility Study of a Regional Concentrate Conveyance Facility in San Diego County	$500,000	$250,000	$250,000
4	F-2006-06	City of Oxnard, Water Division	Blending Station No. 3 Desalter	$374,000	$187,000	$187,000
Subtotal				**$1,463,000**	**$724,000**	**$724,000**

Projects Recommended for Funding

Pilots and Demonstration Projects (9 recommended projects out of 17 applications)

Rank	DWR ID	Applicant	Project	Total Cost	Funds Requested	Awarded Grant
1	P-2006-05	East Bay Municipal Utility District	Bay Area Regional Desalination Project	$1,898,600	$949,300	$949,300
2	P-2006-08	Municipal Water District of Orange County	Test Slant Well - Pilot Plant Treatment and Testing Phase	$4,171,226	$1,500,000	$1,500,000
3	P-2006-11	Indian Wells Valley Water District	Pilot Testing of Zero-Liquid-Discharge Technologies Using Brackish Groundwater for Inland Desert Communities	$1,189,000	$578,500	$578,500
4	P-2006-01	Los Angeles Department of Water and Power	Seawater Desalination Pilot Project	$2,877,780	$1,224,300	$1,224,300
5	P-2006-12	Board of Water Commissioners of the City of Long Beach	Mitigating Water Quality Effects of Desalinated Seawater	$2,270,000	$1,000,000	$1,000,000
6	P-2006-07	Bureau of Reclamation, U.S. Department of Interior	Vertical Tube Evaporator Geothermal Desalination Demonstration Project	$3,693,500	$1,500,000	$1,318,605
7	P-2006-04	Affordable Desalination Collaboration	Optimizing Seawater Reverse Osmosis for Affordable Desalination	$2,368,437	$1,175,237	$1,000,000
8	P-2006-14	City of Camarillo	City of Camarillo Brackish Water Desalination Pilot Study	$767,744	$383,872	$383,872
10*	P-2006-10	City of Avalon	Catalina Large Diameter Membrane SWRO Energy Reduction Project	$3,637,500	$1,500,000	$1,000,000
Subtotal				**$22,873,787**	**$9,811,209**	**$8,954,577**

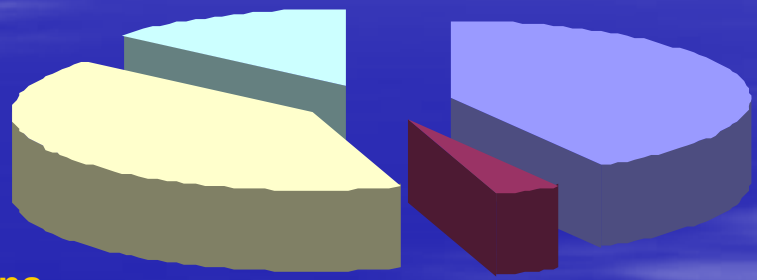
* Applicant of the project ranked 9 has been awarded grants for two other projects under this funding program

Projects Recommended for Funding

Research and Development Projects (7 recommended projects out of 13 applications)

Rank	DWR ID	Applicant	Project	Total Cost	Funds Requested	Awarded Grant
1	R&D-2006-07	West Basin Municipal Water District	Critical Raw Water Quality Issues Unique to Seawater: Marine Phytoplankton Blooms, their Associated Biotoxins, and Transient Urban Stormwater Inputs	$1,245,800	$496,483	$496,483
2	R&D-2006-10	Bureau of Reclamation	Development of New Chlorine-Resistant Reverse Osmosis membranes	$2,554,394	$498,679	$498,679
3	R&D-2006-09	University of California, Los Angeles	Advanced Monitoring, Optimization, and Control Technologies for High-Efficiency Membrane Desalination	$1,068,256	$500,000	$500,000
4	R&D-2006-08	Colorado School of Mines	Novel Hybrid Membrane Desalination Process with Minimal Pretreatment and Concentrate	$1,071,702	$499,957	$499,957
5	R&D-2006-06	Sweetwater Authority	Zero Discharge Solar Distillation Research and Development Project	$990,800	$481,500	$481,500
6	R&D-2006-13	Lawrence Livermore National Laboratory	Desalination Using Carbon Nanotube Membranes	$749,345	$249,345	$249,345
7	R&D-2006-04	Montara Water and Sanitary District	Subsurface Intake Filter Technology Evaluation	$271,213	$135,000	$135,000
Subtotal				**$7,951,510**	**$2,860,964**	**$2,860,964**

	Total Cost of Awarded Projects	Funds Requested by Grantees	Awarded Grants
GRAND TOTALS	**$75,303,297**	**$22,396,173**	**$21,539,541**



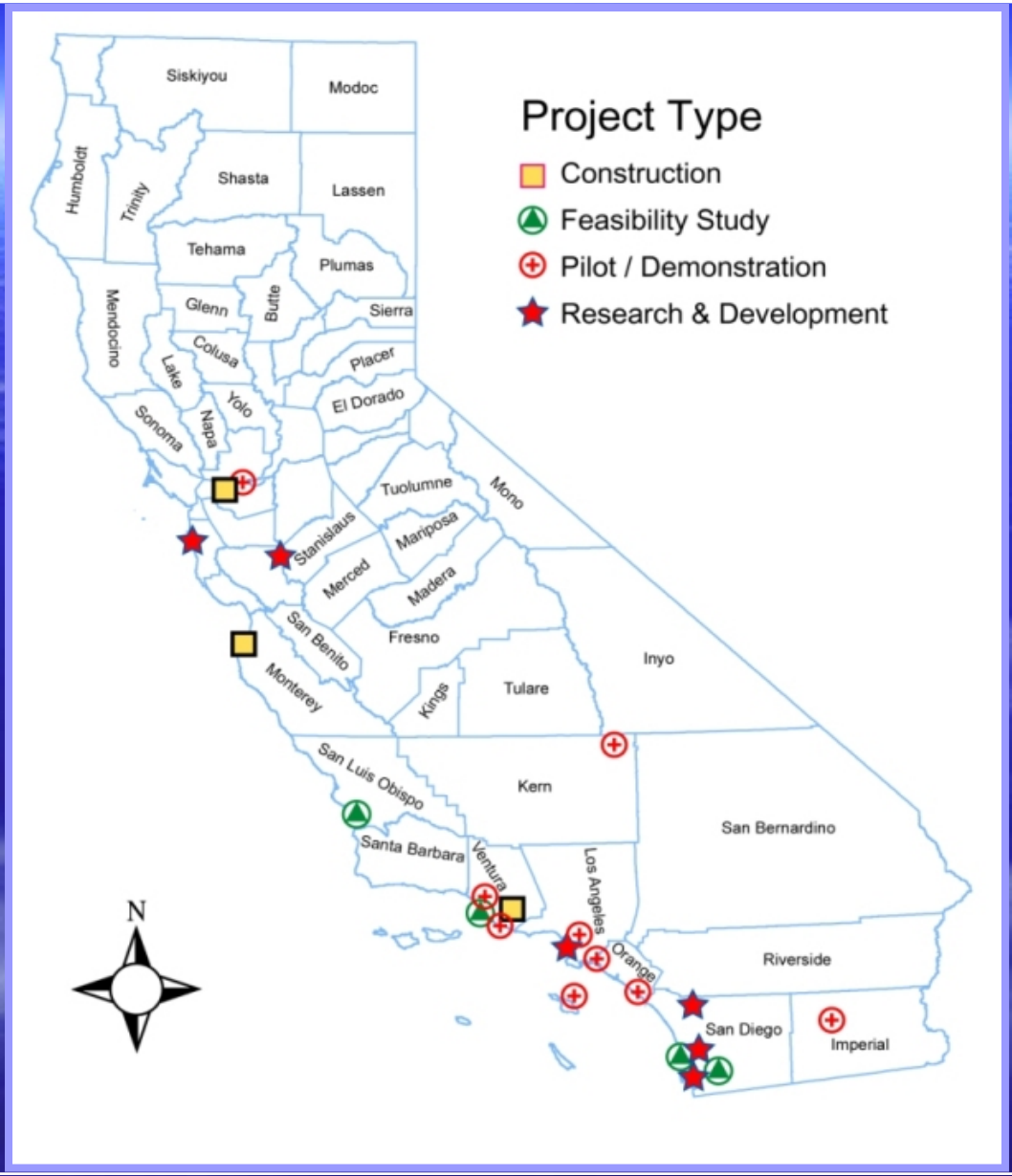
7 Research & Development
$2,860,964
13%

Construction Projects 3
$9,000,000
42%

9 Pilots & Demonstrations
$8,954,577
42%

Feasibility Studies
4 $724,000
3%

Proposition 50 Desalination Grants – 2006 Funding Cycle
Proposed Funding Distribution by Project Category

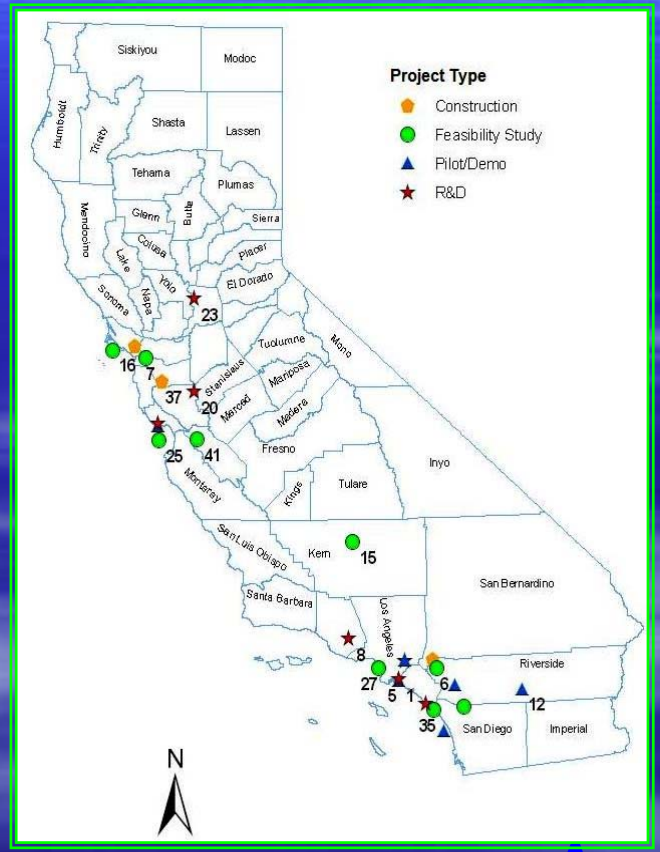


Geographic Distribution of Projects Recommended for Funding

2005 Funding Cycle Awarded Grants

2005 Funding Cycle Awarded Grants

Project Category	(Number of Funded Projects / Total Projects)	Project Total Cost ($)	Requested ($)	Grant Amount ($)
Construction Projects	(3/8)	104,359,043	15,000,000	8,930,744
Pilots & Demonstrations	(6/14)	26,438,272	10,474,232	7,974,516
Research and Development	(7/11)	13,804,295	6,004,746	6,004,746
Feasibility Studies	(8/9)	4,437,061	2,089,994	1,840,453
Total	**(24/42)**	**149,038,671**	**33,568,972**	**24,750,459**



Prop 50 Desalination Grants Outcome

- ***Competitive process***
- ***A balanced distribution of fund to brackish water desalination projects and ocean/bay water desalination related projects with a statewide geographically balanced distribution.***
- ***National level involvement***

2006 Desal Grant Funding Recommendations

- ***Public comments on the funding recommendations are due by June 26***

- ***Comments may be sent to:***

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Office of Water Use Efficiency and Transfers
California Department of Water Resources
901 P Street
Sacramento, CA 95814

Next Steps and Anticipated Dates

- *DWR Funding decision (by June 30, 2006)*
- *Development of Agreements (July-Nov., 2006)*
  - *Scope of work*
  - *Terms of agreement*
  - *Budget and payments*
  - *Board resolution, when applicable!*
- *Execution of Agreements (Nov.- Dec., 2006)*

Helpful Links

Department of Water Resources

www.water.ca.gov

Recycling and Desalination Branch

www.owue.water.ca.gov/recycle/